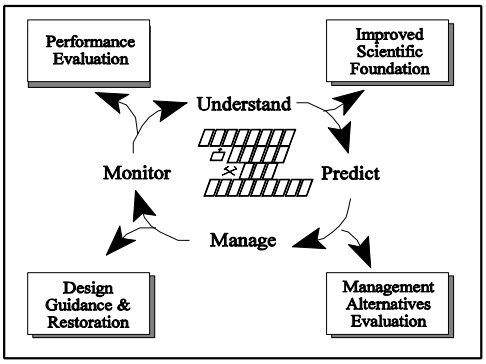
EXECUTIVE SUMMARY

STRATEGY FOR AN INTEGRATED ECOLOGICAL

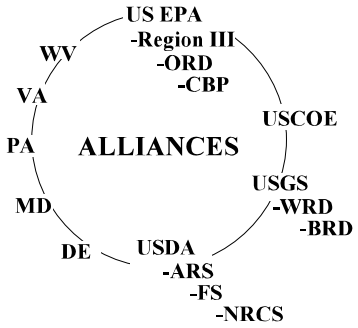
RESTORATION RESEARCH INITIATIVE

A Research Initiative Partnering EPA with Other Federal and State Agencies Interested in the Study, Evaluation, and Restoration of Riparian Buffer Areas in the Mid-Atlantic Region.

- Increased sediments, nutrients, and other contaminants in the Mid-Atlantic region contribute to environmental problems ranging from stream degradation to *Pfiesteria* attacks in Chesapeake Bay. **Restoring riparian areas** - the filters between terrestrial watersheds and aquatic ecosystems - represents a cost-effective, environmentally sound approach for reducing these contaminants loads.
- The **goal** of this initiative is to better understand how riparian areas function, particularly when placed at different locations in the watershed, build on existing restoration efforts, develop predictive tools and provide design guidance that can be used to implement watershed management and protection programs.
- The **objectives** of this initiative are illustrated on the right.



- There are **three interacting elements** that form the foundation for this initiative:



1) **Alliance Formation** - At the present time, the agencies interested in forming innovative partnerships and jointly conducting research are shown on the left.

2) **Research Framework** - The initiative will be built around the Ecological Risk Assessment Framework to ensure ecological risks from various management activities occurring within the watershed and the Region can be estimated and incorporated in the decision making process.

3) **Research Studies** - Five research categories will contribute to riparian area restoration:

   - **Targeting/characterization** research will identify specific, high priority sites for intensive research, nested within a greater number of sites to characterize conditions within watersheds throughout the Mid-Atlantic region.
   - **Riparian configuration** research, integrating surface/subsurface hydrologic, physicochemical and biological processes, will determine the extent of the area, physical-chemical characteristics, and the species composition needed to reduce contaminant loads.
   - **Configuration monitoring**, including ground-level and remotely-sensed monitoring data will initially establish the baseline conditions and subsequently document the performance of different riparian area configurations.
   - **Evaluation** and **predictive tools** will be developed both for diagnosing problems and for predicting possible future conditions under different watershed management activities.
   - **Management guidance** will be provided to design the riparian area, evaluate its performance, and estimate the economic benefits of riparian area restoration at the watershed and regional scales.

- The strategy was reviewed with a **consensus among the agencies to proceed** with the initiative. The next step is present this strategy to senior administrators in the partner agencies.